

SOME BOREAL SPECIES AND VARIETIES OF *ANTENNARIA*
AND *ANAPHALIS*.

M. L. FERNALD and K. M. WIEGAND.

THE GENUS *ANTENNARIA* IN NEWFOUNDLAND.

Two species of *Antennaria*, *A. canadensis* Greene and *A. neodioica* Greene, have heretofore been known to extend northeastward to Newfoundland, but during the past summer our explorations brought to light several others upon the western coast: *A. petaloidea* Fernald at one station; a fourth species which for proper identification must await further field study; and the two plants which are described below.

ANTENNARIA eucosma n. sp., argenteo-sericea plus minusve stolonifera; stolonibus gracilibus procumbentibus paullo subterraneis bracteosis, bracteis paucis brunneis; caule florifero 8–25 cm. alto sericeo-tomentoso; foliis utrinque sericeo-tomentosis acutis vel breve acuminatis apice obtuse callosis, basilariis erectis lanceolatis vel oblanceolatis rare ellipticis petiolatis 3-nerviis 5–16 cm. longis 5–15 mm. latis, caulinis 4–7 valde minuantibus, superioribus lineari-attenuatis 7–20 mm. longis; corymbo denso vel glomeruliformi; capitulis foemineis 3–10, involucri 7–10 mm. longo basi lanato, bracteis exterioribus ovatis vel oblongis, interioribus lanceolato-linearibus, omnibus apice scariosis conspicue brunneis vel castaneis, stylis brunneis vel purpurascens; capitulis masculis similibus minoribus, involucri circa 6 mm. longo, pappi setis apici paullo incrassatis usque ad apicem serrulatis.

Silvery sericeous, more or less stoloniferous; stolons (and root-stocks) slender, procumbent, slightly subterranean, with few brown scaly bracts and a tuft of long erect terminal leaves: flowering stem slender, 8–25 cm. high, silky-tomentose: leaves silky-tomentose, acute to short-acuminate, with a blunt callous tip; the basal and those of the stolons upright, lanceolate to oblanceolate, rarely elliptical, tapering gradually to a distinct petiole, 3-nerved, (2–) 5–16 cm. long, 5–15 mm. broad; the 4–7 cauline rapidly diminishing in size; the uppermost linear-attenuate, 7–20 mm. long: corymb dense or glomerulate: pistillate heads 3–10; the involucri 7–10 mm. high, lanate at base, the outer bracts ovate or oblong, the inner lance-linear, all with conspicuous brown or castaneous scarious tips: styles dark-brown or purple: staminate heads similar, smaller; the involucri about 6 mm. high; pappus-bristles slightly thickened upward, serrulate to the tip.—NEWFOUNDLAND: abundant on dry limestone barrens, upper

slopes and tablelands, altitude 200–300 m., Table Mountain, Port au Port Bay, August 16, 1910, *Fernald & Wiegand*, no. 4144 (TYPE in Gray Herb.).

Antennaria eucosma is a remarkable plant, combining characteristics of the *A. plantaginifolia* group of species with those of *A. carpatica* and its allies. It differs at a glance from all the species of the former series by its very elongate upright lanceolate leaves which closely match those of *A. pulcherrima* (Hook.) Greene, a Rocky Mountain species allied to the Old World *A. carpatica* (Wahl.) R. Br. From *A. pulcherrima*, *A. lanata* (Hook.) Greene (also of northwestern America), and *A. carpatica* it is distinguished at once by its slender elongate rootstock and slender horizontal stolons. From *A. pulcherrima*, which it resembles in foliage and pubescence, it is further distinguished by its fewer larger pistillate heads with long dark involucre bracts, its smaller staminate heads with less dilated and more uniformly toothed pappus-bristles; from *A. lanata* by its sericeous pubescence, larger pistillate heads with brown rather than lead-colored bracts; and from *A. carpatica* by its much larger habit, broader uniformly sericeous 3-nerved leaves, larger heads with brown involucre, etc.

An old specimen in the Gray Herbarium collected on Anticosti by Pursh is apparently referable to this species, but the material is inadequate for final determination. This is presumably the plant referred to by Hooker as his *A. carpatica*, *a. humilis* (Hook. Fl. Bor.-Am. i. 329), but Hooker's description and bibliographic citations show his var. *humilis* to be typical *A. carpatica*. The Anticosti plant was likewise referred by Gray (Syn. Fl. i. pt. 2, 232) to true *A. carpatica*.

ANTENNARIA ALPINA (L.) R. Br., var. **cana**, n. var., foliis utrinque sericeo-tomentosis, tomento denso cano.

Like typical *A. alpina* but with the leaves permanently whitened on both sides with a close silvery tomentum.—*A. alpina*, var.—, Hartman, Skand. Fl. ed. 11, 13 (1879).—Apparently rare in Scandinavia, where the true *A. alpina*, with the leaves bright green and glabrous or glabrate above, is the common form of the species; but apparently largely replacing in eastern America the typical green-leaved plant. The following specimens have been examined by us. NORWAY: Dovre, June 28, 1870, *Zetterstedt & Wickbom*; Dovre, without date, ex herb. *Klatt*. GREENLAND: e. Greenland, *Wormskjold*; Disco and Godthaab, July 14, 1892, *W. E. Meehan*, no. 38; Godthaab, Sept. 7, 1894, *H. E. Wetherill*, no. 20; Nugsuak Peninsula, August 12,

1896, *Cornell Party*. LABRADOR: near Hebron, *Mentzel*; Rama, August 20, 1897, *J. D. Sornborger*, no. 156; Port Manvers, August 11, 1900, *E. B. Delabarre*. NEWFOUNDLAND: dry limestone barrens, Pointe Riche, August 4, 1910, *Fernald & Wiegand*, no. 4139 (TYPE in Gray Herb.); dry limestone barrens, altitude 200–300 m., Table Mountain, Port au Port Bay, August 16, 1910, *Fernald & Wiegand*, no. 4141.

Although the character here used to distinguish the var. *cana* is often used as a key-character to separate such species as *A. neodioica* Greene and *A. canadensis* Greene or *A. plantaginifolia* (L.) Richardson and *A. Parlinii* Fernald, it is found in those cases to be only one of several characters which differentiate the species. In *A. alpina*, var. *cana*, however, we have been unable to find any other character by which the plant may be separated from *A. alpina*. It is of course barely possible that var. *cana* may eventually prove to be specifically distinct, but the writers are rather of the opinion that, when better known, *A. alpina* will be found to be a circumpolar species and that many high-northern and alpine plants which have been recently put forward as species will prove to be better treated as geographic varieties or else as subspecies.

ANAPHALIS MARGARITACEA AND ITS VAR. OCCIDENTALIS.

In 1905 *Anaphalis margaritacea*, var. *occidentalis* Greene, with the very large flat leaves bright green and glabrous above, was reported¹ from Gaspé County, Quebec, and from southwestern Newfoundland; and subsequently, prior to the issue of the 7th edition of Gray's Manual, it was found to extend up the St. Lawrence to the northeastern edge of the Manual range. In the summer of 1909 the present writers found the variety, sometimes in most characteristic development, sometimes passing very clearly to the ordinary form of the species (which has the shorter narrower upper leaves usually whitened above and tending to become revolute at the margins) at various stations on the coast of Washington County, Maine, and in the valleys of the St. John and Aroostook Rivers; and during the past summer, in Newfoundland, further observations have been made with the conclusion that, so far as our experience and herbarium materials show, typical *A. margaritacea*, such as is widely distributed from New Brunswick across New England, is unknown in Newfoundland. In its place are found characteristic var. *occidentalis* or a form with the leaves quite as pubescent above as those of *A. margaritacea*, but

¹ Fernald, RHODORA, vii. 156 (1905).

with the uppermost broad and flat and only slightly reduced in length, thus simulating those of var. *occidentalis*. Similar transitional specimens occur on the continent,—in Quebec, Nova Scotia, New Brunswick, Maine, etc.—indicating that northeastward *A. margaritacea* of our hot dry pastures passes by numerous gradations to the extreme var. *occidentalis* of the cooler and moister region of the Bay of Fundy and the Gulf of St. Lawrence.

When *Anaphalis margaritacea*, var. *occidentalis* was first described¹ it was supposed to be restricted to the Pacific slope: “common among sand hills of the seaboard from at least middle California to Alaska.” In 1905² it was considered as belonging to the Pacific slope and to the region of the Gulf of St. Lawrence; but now, after studying the material in the Gray Herbarium in the light of a fuller field-experience, we find that var. *occidentalis*, like the majority of plants which occur both in the Northwest and in the boreal areas of eastern Canada, has intermediate areas in the cooler and moister regions across the continent,—in the Great Gulf of the White Mountains, about the Upper Great Lakes, in the Black Hills, and in the northern Rocky Mts. It is, furthermore, discovered that the common plant of northern Asia is var. *occidentalis* rather than typical *A. margaritacea* as is the plant commonly cultivated and now somewhat naturalized in Europe. Since it is stated that the cultivated plant of Europe (var. *occidentalis*) was introduced from America “about the sixteenth century,”³ it is probable that it was carried thence from Newfoundland or eastern Canada.

The preceding notes may be briefly summarized as follows:

ANAPHALIS MARGARITACEA (L.) B. & H. Leaves very numerous, 38–66 (average 51), linear or linear-lanceolate, white-tomentose above or tardily glabrate; those immediately below the inflorescence 1.5–6.5 (av. 3.6) cm. long, 1–3 (av. 2) mm. wide.—Clearings and dry sterile soil, eastern Quebec to Alaska, south at least to Pennsylvania, northern Ohio, South Dakota, New Mexico, and California;⁴ apparently rare in Asia. Passing in cooler or moister regions to

¹ Greene, Fl. Franciscana, 399 (1897).

² Fernald, l. c.

³ Syme, Engl. Bot. v. 77 (1873).

⁴ The southern distribution as here given is based upon specimens seen. The species has been reported from more southern states,—North Carolina (“Middle and Upper Districts,” M. A. Curtis), “mountains of the Southern States!” (Torrey & Gray), West Virginia (Millspaugh), etc.; but no specimens have been examined by the writers from south of Pennsylvania and they are informed by Professor N. L. Britton that at the New York Botanical Garden there are no more southern specimens. The Ohio record is upon the authority of Professor J. H. Schaffner who has kindly verified the occurrence of the plant near Cleveland.

Var. *OCCIDENTALIS* Greene. Leaves fewer, 15–48 (av. 36), bright green and glabrous (or if whitened soon glabrate) above, those immediately below the inflorescence 5–12 (av. 7.8) cm. long, 5–20 (av. 10) mm. wide.—Gravelly or sandy soils and along streams, Newfoundland to Alaska, south to Washington County, Maine, Great Gulf, White Mts., New Hampshire, Minnesota, South Dakota, Colorado, and California; also in Asia and introduced in Europe. Ascending in the Shickshock Mts., Gaspé Co., Quebec, along mountain brooks to 625 m. and known in New Hampshire only from banks of a stream in the Great Gulf, altitude 1070 m. (*A. S. Pease*).

REPORTS ON THE FLORA OF THE BOSTON DISTRICT,—VIII.

THIS report on *Cyperaceae* has been based on carefully determined specimens. These are in the Gray Herbarium, and the herbaria of the New England Botanical Club, Wellesley College, the Boston Society of Natural History, the Peabody Museum at Salem, and the private herbaria of Messrs. J. R. Churchill, Walter Deane, C. A. & A. W. Cheever, C. H. Knowlton, A. S. Pease, W. P. Rich, R. A. Ware and E. F. Williams.

There proved to be extant so many specimens over fifty years old, that it has seemed best to limit such citations, as they are matters of merely secondary interest. Henceforth only such aged specimens as are of special note will be quoted.

The reports received, in connection with the Essex, Middlesex and Metropolitan Park Floras, have given adequate data for the common species, but there are still very large areas on the west and south which are little known. We urge all who have herbaria to join us in this work, or to report additions at any time.

CYPERACEAE.

CYPERUS.

C. aristatus Rottb. Sandy strands of fresh-water ponds. Mystic Pond (*Wm. Boott*, Oct. 1, 1876; *C. E. Perkins*, Aug. 2, 1882; *W. P. Rich*, Sept. 29, 1891); Cambridge (*B. D. Greene*, no date); Concord (*H. Little*, no date); Heard's Pond, Wayland (*E. Hunt*, July, 1873;